What is claimed is:

1. A chemical process for the catalytic reduction of raw organic materials that include higher molecular weight organic compositions, comprising the steps of:

a) introducing said organic material into a pressurized aqueous reactor system having a pump that can generate a pressure of about 200-250 atmospheres;

b) heating said mixture in said reactor system in the presence of super-critical water under high pressure and temperature;

c) maintaining said organic material at a temperature of about 400-525° C for a sufficient period of time, such that said organic material is chemically transformed into a mixture comprising lower molecular weight liquid hydrocarbons of reduced viscosity, carbon dioxide and, when protein or other nitrogenous compounds are present in said organic material, amines; and

d) wherein said chemical transformation occurs in a single reactor zone of said reactor system.

2. The process of claim 1, wherein said reactor system further comprises one or more materials that are inert to said organic materials, their intermediate reaction materials, and final products of said process.

3. The process of claim 1, wherein said reactor system further comprises cooling means exiting an autoclave area.

4. The process of claim 1, wherein hydrolysis and decarboxylation occur at a temperature of about 200-430° C.

5. The process of claim 4, wherein super-critical water with a dielectric constant of $\psi = 2$-5 is miscible with hydrocarbons.

6. The process of claim 1, wherein said reactor is maintained at a temperature of about 430-500° C.

7. The process of claim 1, wherein said catalytic reduction reactions occur simultaneously, independently, in concert or in cascade fashion.

8. The process of claim 1, wherein said catalytic reduction reactions occur within about 3-10 minutes.

9. The process of claim 1, further comprising the step of physical filtration of solids from liquid phases.

10. The process of claim 1, further comprising the step of separating lower viscosity constituents from each other by fractional distillation.

11. The process of claim 1, further comprising the step of separating combined inorganic phase and metals-tars-organo-sulfur contaminants by centrifugation.

12. The process of claim 1, further comprising the step of adding glycerol as a desiccant for drying generated hydrocarbons, and as an absorbent for amines, such that said dried hydrocarbons can be separated before fractional distillation of liquid phase products.

13. The process of claim 1, further comprising the steps of precipitating generated carbon dioxide by lime water, and trapping amines as ammonium salts, thereby controlling amine odors.

14. The process of claim 1, wherein said organic matter is selected from the group consisting of:

a) plastics;

b) petroleum crude heavy oils;

c) kerogens;

d) tar sands;

e) shale;

f) bio-masses;

g) animal fats;

h) triglycerides;

i) lipids;

j) animal excrement;

k) vegetable wastes;

l) sludges;

m) organic wastes;

n) any similar organic matter, which is suitable for use in said catalytic reduction process.

15. The process of claim 1, wherein said organic material is added in the form of an aqueous mixture of about 10-50% by weight.

16. The process of claim 1, further comprising the step of recycling unconsumed organic materials within said reactor system.

17. The process of claim 1, further comprising the step of pre-heating said organic material to about 250° C or above, before said organic material is introduced into said reactor system.

18. The process of claim 17, further comprising the step of recycling waste heat from said process to pre-heat said organic material.

19. The process of claim 1, wherein animal or vegetable derived pathogens are destroyed by sterilization at super-critical temperatures and pressures.

20. The process of claim 1, wherein inorganic and cellulose fractions of animal or vegetable waste are transformed into nitrogen depleted carbonaceous compost, thereby providing solid compost that can be applied to the land as soil builder or burned as a fuel.

21. The process of claim 1, wherein the viscosity of said organic material is reduced by conversion of 200-300° C-sensitive C_n esters, thioesters, amides, or amino acids to C_{n-1} hydrocarbons and/or amines, respectively.

22. The process of claim 1, wherein the viscosity of said organic material is reduced by thermolytic cracking of the more labile carbon-carbon and carbon-sulfur bonds at 400-500° C.

23. The process of claim 1, wherein, when present in said organic material, amides in plastics or protein, esters in polyesters, triglycerides or lipids, and resins in tar sands or petroleum heavy oil are hydrolyzed into acids, alcohols and amines.

24. The process of claim 23, wherein C_n carboxylic acids are decarboxylated to form carbon dioxide and C_{n-1} hydrocarbons.

25. The process of claim 23, wherein amines, either added or generated, catalyze hydrolysis of amides, esters, or thioesters.

26. The process of claim 23, wherein amines, either added or generated, inhibit the corrosive effects of water at supercritical temperatures.

27. The process of claim 23, wherein a mixture of petroleum and triglycerides generates glycerol that desiccates the hydrocarbon phase.

28. The process of claim 23, further comprising the steps of precipitating generated carbon dioxide by lime water, and trapping amines as ammonium salts, thereby controlling amine odors.

29. The process of claim 23, wherein super-critical water reductively hydrogenates the cleaved carbon-carbon and carbon-sulfur terminal radicals without generating coke.

30. The process of claim 23, wherein carbon-carbon and carbon-sulfur scission occurs at a temperature of 430-500° C.

31. The process of claim 30, wherein super-critical water with a dielectric constant of $\psi =$ 2-5 is miscible with hydrocarbons.

32. The process of claim 1, wherein carbon-carbon and carbon-sulfur bonds in natural and synthetic polymers, oligomers, and natural petroleum waxes, when present in said organic material, are reductively cleaved to generate lower molecular weight hydrocarbons and thiols.

33. The process of claim 32, wherein tramp metals precipitate out because lower molecular weight hydrocarbons cannot solubilize them.

34. The process of claim 32, wherein iron oxide, sulfide ion and carbonate ion are catalysts.

35. The process of claim 33, wherein sulfide catalyst is oxidized into sulfate ion.

36. The process of claim 1, wherein chemically solubilized wood extracted lignin is chemically transformed into non-aqueous soluble liquid hydrocarbon and solid carbonaceous fuel.

37. The process of claim 36, wherein Kraft sulfide ions are oxidized into sulfate ion.

38. The process of claim 36, wherein black liquor need not be concentrated in order to separate chemically solubilized lignin from an aqueous phase.